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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/775,464	02/05/2001	Cheol-Hong An	Q62512	1569

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EXAMINER
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PERILLA, JASON M

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/775,464

Applicant(s)

AN, CHEOL-HONG

Examiner

Jason M Perilla

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 September 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 1-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 February 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-19 are pending in the instant application.

#### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the multiplication of a selected one error level by the sampled value of the one isochronous period to create the reference error level (claim 5, lines 8-11; fig. 1) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claims 1-19 are objected to because of the following informalities:

Regarding claim 1, in line 6, it is suggested that “a predetermined period” is replaced by –a predetermined interval” to more appropriately embody the invention and make the claim language more definite. In line 7, it is suggested that “a value sampled” is replaced by –a value output—to more appropriately embody the invention and make the claim language more definite.

Regarding claim 3, the calculation of a low pass filtered value from the low pass filtered value (lines 2-3) causes a conflict in the definition of the value, and it makes the claim indefinite. In lines 3-4, the calculation of a sampled value from the sampled value causes a conflict in the definition of the value, and it makes the claim indefinite.

Regarding claim 4, in line 2, “one error level” should be replaced by –one reference error level—to distinguish it from the error level of claim 1.

Regarding claim 14, the claim is objected to for being indefinite. In lines 10-12 (para. e), “an estimated data transmission rate” is output using the data transmission rate. It is unclear if the estimated data transmission rate is equivalent to the data transmission rate or if the estimated data transmission rate is generated according to the data transmission rate, and it makes the claim indefinite. Further, in lines 13-16 (para. f), the estimated data transmission rate is output under alternate conditions. However, the generation of “an estimated data transmission rate” becomes unclear and indefinite. Because there is no determined step in the method which plainly generates the estimated data transmission rate, steps (e) and (f) conflict. That is, the generation

of the estimated data transmission rate is dependent upon the transmit/receive average mode in (e), although it is claimed as output in step (f) in the transmit/receive tracking mode in step. To overcome the objection, the claim should be amended to be clear and definite.

Further regarding claim 14, in lines 5-6, it is suggested that "at a first predetermined period" is replaced by –at a first predetermined interval" to more appropriately embody the invention and make the claim language more definite.

Appropriate correction is required.

***Allowable Subject Matter***

4. The indication of allowable subject matter is made regarding claims 1-19.
5. The following claims drafted by the examiner and considered to distinguish over objections in this application, are presented to applicant for consideration. The proposed changes made below do not overcome the objection to the drawings (claim 5) or the objection including the indefinite claim language as applied to claim 14 above.

1. An apparatus for detecting a data transmission rate transmitted through a serial bus, the apparatus comprising:

a data transmission rate detecting unit for detecting a data transmission rate of bit stream data transmitted through a predetermined transmission line;

a sampler for sampling a data transmission rate detected by the data transmission rate detecting unit at a predetermined period interval;

a low-pass filter for low-pass filtering a value sampled output by the sampler to produce a first low-pass filtered value;

an error detecting unit for detecting and outputting an error value in the data transmission rate of the transmitted bit stream data using the a value sampled output by the sampler and the first low-pass filtered value;

a comparing unit for comparing the error value detected output by the error detecting unit with a reference error level; and

an estimated data transmission rate output unit for outputting an estimated data transmission rate based on the first low-pass filtered value when the error value is smaller than the reference error level.

2. The apparatus for detecting a data transmission rate according to claim 1, wherein the error detecting unit is formed to detect an error value of one isochronous period, the comparing unit is formed to compare the error value of the one isochronous period with the reference error level, and the estimated data transmission rate output unit is formed to output ~~the~~ an estimated data transmission rate of the one isochronous period, in a case where the serial bus is an IEEE 1394 bus.

3. The apparatus for detecting a data transmission rate according to claim 2, wherein the error detecting unit is formed to calculate a low-pass filtered value of the one isochronous period from the first low-pass filtered value, to calculate a sampled value of the one isochronous period from the value output by the sampler sampled value, and to divide an absolute difference between the low-pass filtered value of the one isochronous period and the sampled value of the one isochronous period by the

sampled value of the one isochronous period, ~~and to detect an error of the one isochronous period.~~

4. The apparatus for detecting a data transmission rate according to claim 2, wherein the comparing unit sets one reference error level selected from a plurality of reference error levels by a user as the reference error level.

5. The apparatus for detecting a data transmission rate according to claim 2, wherein the error detecting unit is formed to calculate a low-pass filtered value of the one isochronous period from the first low-pass filtered value, to calculate a sampled value of the one isochronous period from the value output by the sampler ~~sampled value, and~~ to divide an absolute difference between the low-pass filtered value of the one isochronous period and the sampled value of the one isochronous period by the sampled value of the one isochronous period, ~~and to detect an error value of the one isochronous period;~~ and

wherein the comparing unit sets a value obtained when one reference error level selected by a user from a plurality of reference error levels is multiplied by the sampled value of the one isochronous period, as the reference error level, and is formed to compare the error value of the one isochronous period with the reference error level.

6. The apparatus for detecting a data transmission rate according to claim 2, wherein the estimated data transmission rate output unit calculates a low-pass filtered value of the one isochronous period from the first low-pass filtered value and outputs the low-pass filtered value of the one isochronous period as the estimated data transmission rate.

10. An apparatus for detecting a data transmission rate through a serial bus after a bandwidth for the serial bus is allocated to a system, the apparatus comprising:

a data transmission rate detecting unit for detecting a data transmission rate of bit stream data transmitted through a predetermined transmission line;

a sampler for sampling a data transmission rate detected by the data transmission rate detecting unit at a predetermined period interval;

a low-pass filter for low-pass filtering a value sampled output by the sampler to produce a first low pass filtered value;

an error detecting unit for detecting and outputting an error value in the data transmission rate of the transmitted bit stream data using the a value sampled output by the sampler and a the first low-pass filtered value;

a first comparing unit for comparing the error value output detected by the error detecting unit with a reference error level;

an estimated data transmission rate output unit for outputting an estimated data transmission rate based on the first low-pass filtered value when the error value is smaller than the reference error level; and

a second comparing unit for comparing the estimated data transmission rate with an upper bound and a lower bound to notify whether the estimated data transmission rate output from the estimated data transmission rate output unit exists between the upper bound and the lower bound set by a user according to the an allocated bandwidth and to determine whether the estimated data transmission rate is output.



14. A method for detecting a data transmission rate through a serial bus, the method comprising the steps of:

- (a) detecting a data transmission rate of bit stream data transmitted through a predetermined transmission line;
- (b) detecting an error in the data transmission rate at a first predetermined period interval using the detected data transmission rate;
- (c) comparing the error with a reference error level;
- (d) checking present operation mode when the error is smaller than the reference error level;
- (e) outputting an estimated data transmission rate for the first predetermined period interval using the data transmission rate when the present operation mode is a transmit/receive average mode; and
- (f) outputting the estimated data transmission rate for the first predetermined period interval in a case where the estimated data transmission rate for the first predetermined period does not exist between a predetermined upper bound and a predetermined lower bound when the present operation mode is a transmit/receive tracking mode.

15. The method for detecting a data transmission rate according to claim 14, wherein the step (b) comprises the steps of:

- (b1) sampling the detected data transmission rate at a first predetermined frequency;

(b2) filtering a sampled value output in the step (b1) by using low-pass filtering to produce a first low pass filtered value; and

(b3) detecting the error in the data transmission rate of the bit stream data using the sampled value and a the first low-pass filtered value in the step (b2).

16. The method for detecting a data transmission rate according to claim 15, wherein the reference error level in the step (c) is one reference error level selected from a plurality of reference error levels by a user, or a value resulting from performing a predetermined operation on the one selected reference error level and the sampled value.

18. The method for detecting a data transmission rate according to claim 15, wherein the first low-pass filtered value of the first predetermined period detected ~~using the low-pass filtered value in the step (b2)~~ is output as the estimated data transmission rate in the steps (e) and (f).

19. The method for detecting a data transmission rate according to claim 14, wherein the predetermined upper bound and the predetermined lower bound in the step (f) are determined on the basis of the estimated data transmission rate output in the step (e), and the step (f) further comprises the step of notifying whether the estimated data transmission rate exists between the predetermined upper bound and the predetermined lower bound.

### ***Conclusion***

6. This application is in condition for allowance except for the following formal matters:

The drawing and claim objections set forth above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M Perilla whose telephone number is (571) 272-3055. The examiner can normally be reached on M-F 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jason M. Perilla  
January 24, 2005

Art Unit: 2634

jmp

A handwritten signature in black ink, appearing to read "Chieh M. Fan". The signature is written in a cursive, flowing style.

**CHIEH M. FAN  
PRIMARY EXAMINER**